January 25, 2002

ELECTRONIC FILING

Ms. Magalie Roman Salas
Office of the Secretary
Federal Communications Commission
445 12th Street, SW
12th Street Lobby, TW-A325
Washington, D.C. 20554

Re: ET Docket No. 98-153

Dear Ms. Salas:

Enclosed for filing are the comments of Tendler Cellular, Inc. to the NPRM associated with the above-mentioned docket.

It would be appreciated if you would forward these comments to the appropriate parties.

Sincerely,

Tendler Cellular, Inc.
by Robert K. Tendler
Chairman

RKT/je

enclosure

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of	)	
	)	
Revision of Part 15 of the Commission's	)	ET Docket No. 98-153
Rules Regarding Ultra-Wideband	)	
Transmission Systems	)	

COMMENTS OF TENDLER CELLULAR, INC.
CAN A GPS RECEIVER WORK AT ALL WITH UWB?
(COMMENTS ON QUALCOMM UWB IMPACT TEST)

Robert K. Tendler
Chairman
Tendler Cellular, Inc.
65 Atlantic Avenue
Boston, Massachusetts 02110
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January 25, 2002

SUMMARY

Qualcomm test results show that UWB emissions will cause GPS receivers to fail to lock up. The FCC should therefore not permit any UWB emissions in the GPS band. In terms of related importance, E-911 takes precedence over yet unproven technology whose major application is not in the safety arena.

CAN A GPS RECEIVER WORK AT ALL WITH UWB?

COMMENTS ON QUALCOMM UWB IMPACT TEST

The problem with UWB is that UWB will preclude a GPS receiver from ever locking up on the GPS satellites. This means that an individual seeking to be located via GPS may never be found. If UWB results in just one such incident, then blame is securely on the FCC.

Previous test reports have centered on the effect UWB has on an already locked up GPS receivers...and the effect is monumental. UWB can cause an already locked up receiver to lose lock. UWB can cause the indicated location to be off by hundreds of meters. For this reason alone there should be no UWB energy radiated in the GPS band.

Worse yet is the fact that most GPS receivers will be off when an accident or other incident occurs. This is because battery drain on any handheld unit is too great to keep the GPS receiver on all the time.

With the GPS receiver off and then turned on, it must be able to detect GPS signals at -150 dBm. (Uncorrelated GPS signals arrive at the earth at -150 dBm). If interfering signals are above -150 dBm, the GPS receiver when turned on will not lock up. Thus with UWB there are instances when the GPS receiver will never be able to output position.

Even if the GPS receiver eventually locks up, say for instance in 10 minutes, this is clearly too long in rescue scenarios since someone can bleed to death in eight minutes.

Now we have a test from Qualcomm that quantifies the problem.

Analysis of the Qualcomm UWB Interference Test indicates 21 instances out of 48 total tries in which only two satellites were detectable in the presence of UWB radiation. GPS receivers need at least three satellites to lock up and give position. Thus UWB makes GPS receivers fail.

If the utilization of UWB prohibits transmission of only one injured party's location, UWB should not be authorized. The FCC's analysis should not be a "numbers game" in which there are an acceptable number of failures for a GPS receiver to lock up in the presence of UWB interference.

There is no justification to jam GPS in the hope that some as-yet unproven technology would benefit. Also, even if there were a benefit, it pales into insignificance for E-911 rescue.

For the FCC to play a numbers game with human lives is unacceptable.

The FCC should mandate that there should be no interference with the receipt of GPS signals, either by limiting UWB usage to frequencies above the GPS frequency band or by using frequency hopping techniques common in spread spectrum systems to avoid GPS frequencies.

It is the position of this petitioner that no amount of filtering of UWB signals can guarantee zero interference with GPS, as there are no known filters that will decrease the output of a UWB device to -150 dBm. This is an absolute requirement for a GPS receiver to work.

Alternatively, this presenter petitions the Commission to delay hearings on UWB until after appropriate testing has been completed to assure that whatever will be authorized by the FCC will not affect the ability of a GPS receiver to lock up on the satellites and will not affect the critical time to first fix for any GPS receiver.

Respectfully Submitted,

Robert K. Tendler
Tendler Cellular, Inc